

UTERINE RUPTURE; ITS MATERNAL CONSEQUENCES

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ABSTRACT.....objective: To evaluate frequency, maternal morbidity and mortality in patients with uterine rupture at Gynae Unit -II of civil Hospital Hyderabad. **Study design:** Prospective descriptive study. **Study setting:** Department of Obstetrics and Gynecology, unit-II Liaquat University Hospital Hyderabad Sindh Pakistan; from 1st October 2010 to 31st March 2011. **Subjects and methods:** All the patients diagnosed as case of uterine rupture was taken as study subject. Data was collected in a pre-designed porforma. Variable analyzed were frequency, demographic characters, maternal morbidity and mortality. **Results:** During the study, 34 patients out of 1400 deliveries presented with uterine rupture resulting in a frequency of 2.42% or 1: 41 deliveries. 64.7%(22) patients were between 26 to 35 years age and 67.64%(23) were multipara. 26.47%(9) presented with extension of tears, 17.6%(6) with shock, 20.5%(7) with septicemia and 20.5%(7) with wound infection. **Conclusions:** Uterine rupture is yet a common obstetrical emergency in our area. The significant morbidity and mortality deserves our special attention by a collaborative approach. Regular ante natal checkups, careful selection of patients for vaginal delivery, vigilantly monitoring during labor with smooth switch over to operative delivery can reduce this drastic obstetrical complication.

Key words: Uterine rupture, maternal morbidity, maternal mortality.

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INTRODUCTION

Uterine rupture is one of the preventable catastrophic complications in obstetric care and a major cause of maternal morbidity and mortality¹. It may occur in previously intact uterus or in one with a previous cesarean or Myomectomy scars. It usually follows the course of labor; however one third of uterine scar following earlier cesarean section (classical) may rupture during third trimester before term and before the onset of labor². Incidence of uterine rupture is 0.05% - 0.086% of all pregnancies³, but varies world wide ranging between 2.4 to 8.9 per 1000 deliveries, which is a reflection of the standard of obstetric care and access to it⁴. It is rarely encountered in developed countries with an overall incidence of 1:1536 pregnancies (0.07%)⁵, but in the developing countries, it is still at the dock, especially in Pakistan, due to illiteracy, male dominant society and untrained birth attendant. Majority of population living in rural areas do not have an easy accessibility to a maternity and essential obstetric care. Therefore they may develop life threatening complications of pregnancy and the fatality rate associated with ruptured uterus is very

high⁶.

Uterine rupture has different causes, unlike in the developed world where excessive and prolonged use of oxytocin in the presence of scarred uterus is the major cause. In less developed countries, fetopelvic disproportion, causing obstructed labor, is the major cause of uterine rupture⁷⁻⁹.

In developing countries where maternal mortality rate is 100-200 times higher than Europe and North America 10% of maternal deaths are due to uterine rupture¹⁰. Delay in management places both mother and fetus at significant risk. Major maternal complications are hemorrhage, shock, post-operative infections, bladder damage, uretric damage, thrombophlebitis, amniotic / pulmonary embolism, disseminated intravascular coagulation and death².

Our unit being a part of tertiary care center receives a high number of patients having uterine rupture from peripheral remote area, maternity clinics and nursing home, with significant adverse outcome and this has

drawn our attention to evaluate the spectrum of problem. This study will also help to identify the changing trends in our area and to plan the appropriate guidelines for making the pregnancy and labor a safe event.

PATIENTS AND METHODS

This prospective study was conducted at gynecology unit II of LUHMS from 1st October 2010 to 31st March 2011. Departmental Approval for study was obtained. All patients admitted in labor room either clinically diagnosed as rupture uterus or patient with silent rupture at term were taken as study subject. Exclusion criteria were no consenting women and patients with gestational age less than 37 weeks. Data were collected on specially designed proforma. Variable analyzed were frequency, demographic characters, maternal morbidity and mortality. Data was analyzed in SPSS version 16.

RESULTS

Out of 1400 deliveries there were 34 cases of uterine rupture during study period giving frequency of 1:41 or 2.42%. 64.7 % (22) patients were un booked while 35.29 % (12) were booked. (23) 67.64% were multipara, 9 (26.47%) were grand multipara and 2 (5.88%) were primipara. 64.7% patients 22 were between age group 26-35 years and 04 (11.76%) were between 36-42 years of age. Table.II shows various maternal morbidities due to uterine rupture. 29(85.2%) patients under went uterine repair while 2(5.88%) patients ended up with hysterectomy and 1(2.94%) patient had bladder repair. Two patients died soon after admission without surgical exploration. 9(26.47%) patients had extension of tears, 7(20.5%) patients had wound infection and sepsis while 6(17.6%) patients were received in shock. 5(14.7%) patients had UTI and post partum hemorrhage. 2(5.88%) patients had post partum depression and blood transfusion reaction. Other complications like DVT, fistula formation, aspiration pneumonia and acute renal failure each observed in 1 patient (2.94%).

Majority of patients had a combination of morbidities.

Variable	Number	Percentage
Age		
15-25	08	23
26-35	22	64.7
36-42	04	11.76
Parity		
PG	02	5.88
Multigravida	23	67.64
Grandmultigravida	09	26.47
Booking status		
Un-booked	22	64.7
Booked	12	35.29
Gestational age		
36-38	21	61.76
39-40	13	38.23

Table-I. Demographic data of patients (n=34)

Material Morbidities	Number	Percentage
Extension of tears	09	26.47%
Wound infection	07	20.5%
Sepsis	07	20.5%
Shock	06	17.6%
UTI	05	14.7%
Post partum hemorrhage	05	14.7%
Post partum depression	02	5.88%
Blood transfusion reaction	02	5.88%
Hysterectomy	02	5.88%
DVT	01	2.94%
Fistula formation	01	2.94%
Aspiration pneumonia	01	2.94%
Acute renal failure	01	2.94%
Bladder repair	01	2.94%
No. of Maternal deaths	02	5.88%

Table-II. Maternal morbidities (n=34)

Majority of patients had a combination of morbidities

DISCUSSION

The frequency of ruptured uterus in our study is 1:41 deliveries (2.42%), while it varies between 2.4 and 8.9 per 1000 deliveries in different studies⁴. 64.7% patients in our study were un-booked indicating a

major contributing factor for maternal morbidity and mortality with uterine rupture. In a study by Anjum in Karachi revealed that “women receiving antenatal care were more knowledgeable about the importance of nutrition and health awareness¹¹. Furthermore, it is evidenced in a number of studies that when a comprehensive antenatal care programmed is implemented, it has reduced the incidence of uterine rupture by almost five times¹². Simple interventions like antenatal, provision of health care services at rural health centers and strengthening of obstetric care services at every level of health care facility can significantly reduce these deaths.

Multiparity is still a predisposing factor in Pakistan, a country of a high fertility rate (6.5), it could be one of the major factor for uterine rupture. In our study 67.64% patients were multipara, which is similar to the findings of Faleyimu BL, et al from Nigeria¹³. The results are also in good agreement with other Pakistani's studies such as Munim¹⁴ and Malik¹⁵ studies. Thus this major factor can only be minimized by offering postpartum contraception and highlight the importance of fertility regulation at community level.

Maximum cases were seen in age group of 25-35 years (64%). The same result was reported by Malik¹⁵ at Jinnah Medical College Hospital, Karachi and Khan, et al⁶ at Ayub hospital Abbottabad.

In our study, previous scarring of the uterus has emerged as the greatest single predisposing factor to uterine rupture of pregnancy; 79% of all ruptures occurred in the presence of a scar, of which 42% were silent in nature and were discovered at the time of elective repeat caesarean section. Our result does correlate with those of James GD study¹⁶. Such data uphold the dictum, “once a caesarean section always a caesarean. With this changing trend in causative factors, the most important single element in preventing rupture of the uterus like in adherence to strict indications for the first caesarean section.

Prolonged obstructed labor, is no more a contributor for rupture of uterus in the developed countries^{17,18} However 38.23% cases in current study had contributed to uterine rupture. This was in correlation with the reports from WHO¹⁹, Ezechi¹ from Nigeria (91.8%) and Chuni N²⁰ from Nepal (46.5%). It is ridiculous that majority of the patients had their trial of labor at nearby clinics or local maternity homes under supervision of nurses, lady health visitors and doctors, yet there was a delay in decision making for operative delivery. In Pakistan, currently there is no governing body to check the standards and quality of obstetric care provider by such centers and the establishment of such system is the need of the day to avoid these obstetrical mishaps.

One case of bladder rupture in our study was exclusively associated with case of rupture with lower uterine segment. These finding were similar to other studies^{8,21}. This may be due to caesarean section performed by operator with poor surgical skills or in setting with poor aseptic operational techniques, both leading to poor scar integrity.

Blood availability and transfusion in catastrophic events like uterine rupture, is a life saving factor²². This study had showed that a common scenario is that of an already anemic patient with heavy bleeding and poor availability of blood transfusion, which is a problem in nearly all the hospitals of our setup. 55.8% patients had transfusion of 2-4 unit of blood before and during the operation, which was similar with the results of study conducted in Yemen²². Blood availability is a real problem, there is need is to improve blood supply through functional blood banking services especially during peri-operative period. 2 (5.88%) of our patients had blood transfusion reaction. Hysterectomy was required in 5.88% patients with spontaneous rupture because of extensive laceration and intractable hemorrhage which was lower than Garnet¹⁶ study (85%). In our study, decision to conserve or sacrifice the uterus was influenced by the

condition of uterus, age, fertility wishes and socio cultural acceptability. 82% of cases in our study were anemic that is quite closer with Yemen study²² while it is higher than the study of James GD¹⁶. Extension of tears, wound infection, and sepsis were the most common immediate causes of maternal morbidities associated with uterine rupture. Timely diagnosis of uterine rupture and appropriate management can minimize these complications.

We found a high incidence of maternal death related to uterine rupture (5.88%) more than reported by Qadeer S that is 2.123 However, our results are comparable with those of Malik, et al and Rehman J, et al (5%)^{15,24}. The main cause of death was Hypovolemic shock and anemic failure. The intensity of initial resuscitation and speed of surgical rescue play a major role in determining maternal outcome.

No one can deny the negative impact of uterine rupture on maternal and child birth. In Pakistan, there is a tremendous need for expansion of maternal and child health services in urban and more importantly in rural areas. There should be a well organized programmed for the training of traditional birth attendants. Maternity care services need to be improved for early diagnosis of uterine rupture, enhancement of nutrition, reduction of anemia and provide free treatment at teaching hospitals for a favorable fetomaternal outcome.

CONCLUSION

Ruptured uterus continues to be a recurring obstetrical disaster in the developing world with its associated mortality and morbidity. In Pakistan uterine rupture is still a major health problem with the rate being high in rural areas. Socio-economic, cultural factors and shortcomings in health services play major roles in determining the frequency of uterine rupture. However, many efforts have proven insufficient and ineffective in reducing fetomaternal mortality in general because the issue is viewed as a medical or clinical dilemma rather than a broader public health problem.

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*"The trees that are slow to grow bear
the best fruit."*

Molier